a computer housed within the handheld unit and in communication with the video imagery source, the synthetic vision database, the sensor suite, and the display, the computer configured to:

(i) receive the position and attitude data from the sensor suite and compute a view frustum,

(ii) selectively retrieve graphic objects from the synthetic vision database,

(iii) command the display to render, in three dimensional perspective, an image of (a) the real-time actual image that lies wholly or partially within the view frustum and (b) graphic objects selectively retrieved from the synthetic vision database that lie wholly or partially within the view frustum,

wherein the image is rendered on the display with an expanded field of view, the expanded field of view being wider than a user field of view when the user is holding the handheld unit and looking at the image on the display.

18. The system of claim 1, wherein:

the computer updates the display at least 12 times per second; and

position data RMS accuracy is 15 meters or better with 95% confidence.

19. The system of claim 17, further comprising:

an input device in communication with the computer and housed in the handheld unit, the input device for allowing a user to select a plurality of viewpoints of the image rendered on the display.

20. The system of claim 17, wherein the computer implements sensor fusion, Kalman filtering, or display smoothing algorithms to enhance image quality when slow or asynchronous data are received from the sensor suite or the video imagery source.

21. The system of claim 17, wherein the computer is further configured to:

selectively render a reticle symbol to designate an object in the image; and

selectively render an arrow to indicate a direction in which to move the handheld unit, when the designated object is not visible in the image, in order to have the designated object once again visible in the image.

22. The system of claim 17, further comprising:

an external communication device in communication with the computer and configured to selectively communicate with one or more external devices.

23. A synthetic vision system comprising:

a handheld unit;

a sensor suite housed within the handheld unit, the sensor suite comprising position and attitude sensors for reporting position and attitude data, respectively, and a range finder for detecting and measuring distances to objects and reporting measured distance data;

a display housed within the handheld unit and configured to render actual or digitally created scenes; and

a computer housed within the handheld unit and in communication with the sensor suite and the display, the computer configured to (i) receive the position data, the attitude data, and the measure distance data from the sensor suite, (ii) compute a view frustum, (iii) compare computed distances to the detected objects with the distances measured by the range finder, and (iv) command the display to render, in three dimensional perspective, an image of actual or digitally created scenes that lie wholly or partially within the view frustum,

wherein:

the image includes the detected objects, and

the detected objects are rendered in styles that indicate their relative distances.

24. The system of claim 23, wherein:

the computer updates the display at least 12 times per second; and

position data RMS accuracy is 15 meters or better with 95% confidence.

25. The system of claim 23, further comprising:

an input device in communication with the computer and housed in the handheld unit, the input device for allowing a user to select a plurality of viewpoints of the image rendered on the display.

26. The system of claim 23, wherein the computer implements sensor fusion, Kalman filtering, or display smoothing algorithms to enhance image quality when slow or asynchronous data are received from the sensor suite.

27. The system of claim 23, wherein the computer is further configured to:

selectively render a reticle symbol to designate an object in the image; and

selectively render an arrow to indicate a direction in which to move the handheld unit, when the designated object is not visible in the image, in order to have the designated object once again visible in the image.

28. The system of claim 23, further comprising:

an external communication device in communication with the computer and configured to selectively communicate with one or more external devices.

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